



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/540,495

06/23/2005

Srivatsan Srinivas Iyer

2003B002/2

4240

23455 7590 04/18/2011
EXXONMOBIL CHEMICAL COMPANY
5200 BAYWAY DRIVE
P.O. BOX 2149
BAYTOWN, TX 77522-2149

EXAMINER

KRUER, KEVIN R

ART UNIT

PAPER NUMBER

1787

MAIL DATE

DELIVERY MODE

04/18/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/540,495

Applicant(s)

IYER

Examiner

KEVIN R. KRUEER

Art Unit

1787

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 13, 14, 16-20, 23-51, 53-65, 143-146, 149-176, 182-198 and 223 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 13, 14, 16-20, 23-51, 53-65, 143-146, 149-176, 182-198 and 223 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-852)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/16/2010 has been entered.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
2. Claims 1-10, 13, 14, 16-20, 23-512, 53-65, 143-146, 149-176, 182-198, and 223 are rejected under 35 U.S.C. 103(a) as obvious over Exxon (WO 02/051928) in view of Stevens et al (US 6,943,215). Herein, US 6,852,424 is used as an equivalent of the WO document.

Exxon teaches a composite structure comprising a first composite structure and a second composite structure adhered together with an intermediate layer (col 10, lines 10+). The first and second polymer structures may be the same or different (col 12, lines 48+) and can comprise isotactic polypropylene (col 12, lines 55+) or isotactic alpha

olefin-propylene copolymers (col 11, line 39). For example, the copolymer may comprise a random copolymer consisting of 2-8wt% ethylene or hexene (col 11, lines 50+). The intermediate layer may comprise a blend composition comprising a semi-crystalline random copolymer with a homopolymer propylene (col 11, lines 4+). The random copolymer may comprise a propylene-alpha olefin copolymer wherein the alpha olefin is ethylene and is included in amounts of 0-40wt%, preferably 8-18wt% (col 11, lines 50+). Said teaching is understood to be sufficiently specific to anticipate the range of claim 10. The random copolymer has a melting point of 25-105°C (col 13, lines 10+), preferably 25-90°C (col 17, lines 30+); a Mooney viscosity of less than 60 (col 17, line 45); a triad tacticity of greater than 80% (col 9, line 25); a molecular weight distribution of 1.8 to 5 (col 17, line 43). Said polymer is metallocene catalyzed (col 17, line 15) and has a heat of fusion of less than 45 J/g (col 17, lines 33+). Said random copolymer is taught to have a crystallinity that is 2-65% of a homoisotactic polypropylene (col 12, line 63). The polymers are understood to have compatible crystallinity since the all the components are isotactic. The homopolymer propylene is herein understood to read on the "additional" high crystallinity polymer of claims 4 and 5. Said component may be present in amounts of 5-98wt% (col 10, line 51). With regard to claim 6, the composition may further comprise a third component which is different from the high crystallinity polymer but has a higher crystallinity than the random copolymer (col 18, lines 49+).

With regards to the limitation that the polypropylene second layer has a crystallinity that is higher than that of the lower crystallinity polymer, Exxon teaches the random

copolymer should have a crystallinity that is 2-65% of a homoisotactic polypropylene. Furthermore, the disclosed high crystalline isotactic polypropylenes have a crystallinity greater than 40%.

With regards to the limitation that the melting point of the polypropylene is at least 25°C greater than that of the low crystallinity polymer, Exxon teaches the random copolymer should have a lower melting point than the adjacent layers (col 8, lines 46+). Furthermore, Exxon teaches the melting point of the random copolymer is preferably less than 90°C (col 17, line 32) and the polypropylene of the adjacent layer has a melting point of (col 11, line 65). Said teaching is herein understood to be sufficiently specific to anticipate the claimed temperature difference.

With regards to claims 23 and 25, Exxon teaches a composite structure comprising a first composite structure and a second composite structure adhered together with an intermediate layer (col 10, lines 10+) comprising a random copolymer. Said additional layer is understood to read on the backsheet of claim 65. With regard to claim 24, Exxon teaches all or some of the polymer layers may include the blend (col 11, lines 20+). In such an arrangement the intermediate layer reads on the second polymer layer with layers comprising the blend adhered on both sides. With regard to claim 26, Exxon teaches the additional layer may comprise isotactic homopolymer. With regard to claim 27, Exxon teaches one of the outer layers may comprise cured rubber (col 12, lines 50+).

Exxon does not explicitly teach the blend should comprise a copolymer with the claimed crystallinity. However, Stevens teaches an impact resistant blend material

comprising a crystalline homopolymer and an impact modifying copolymer. The copolymer is characterized in that at least 80wt% propylene with the remainder being ethylene (col 6, lines 15+). The triad tacticity should be greater than 75wt% (col 14, lines 50+). The polydispersity is 2 to about 6 (col 6, lines 66+). The polymer is metallocene catalyzed (col 6, line 13) and has a heat of fusion of 0.5-28.71 J/g (col 8, lines 1+). The Mooney viscosity is understood to be anticipated by the melt flow and molecular weight teachings of Stevens. The crystallinity should be 55-0% (col 2, lines 42+). The composition may further comprise an isotactic polypropylene in amounts of 0-100% (col 6, lines 1+). It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the crystallinity of the copolymer based upon the teachings of Stevens. The motivation for doing so would have been to improve the elastic properties and decrease the temperature of the random copolymer.

Exxon does not teach the claimed thickness of claim 223. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the thickness of the laminate based upon its intended end use.

With regards to claims 29-31, neither Exxon nor Stevens teaches the claimed haze. However, Stevens teaches that haze can be controlled by selecting the amount of each component (col 1, lines 50+), the molecular weight of the components (col 1, lines 60+), and the amount of ethylene in the copolymer (col 1, lines 60+). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize said variables in order to optimize the haze.

With regards to claims 32-37, neither Exxon nor Stevens teaches the claimed load loss and tension set. However, Stevens teaches the elastic properties of the material can be controlled by controlling the amount of random copolymer (col 1, lines 55+) and the amount of ethylene in the copolymer (col 1, lines 60+; col 16, lines 50+). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the amount and copolymer content of the random copolymer in order to optimize the laminate's elastic properties, including its tension set and load loss.

With regards to 171 and 172, "the garment" limitations are preamble limitations that are understood not to further limit the claim.

Response to Arguments

Applicant's arguments filed June 16, 2010 have been fully considered but are moot in view of the new grounds of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEVIN R. KRUEER whose telephone number is (571)272-1510. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kevin R Krue/

Primary Examiner, Art Unit 1787